

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An emergency stop system for an elevator,
comprising:

a detection portion for detecting a speed and a position of a car;

a control portion having a storage portion that stores, in correspondence with the position of the car, an overspeed setting level set to be a value larger than the speed of the car during normal operation, the control portion outputting an activation signal when the speed of the car becomes higher than the overspeed setting level at the position of the car obtained based on information from the detection portion, and the overspeed setting level progressively varies based on a distance between the position of the car and a service floor;

a governor rope that moves in synchronism with raising and lowering of the car and is wound around a governor sheave;

a rope catching device having an electromagnetic actuator that is activated upon input of the activation signal, ~~and~~ a restraining portion that restrains the governor rope upon activation of the electromagnetic actuator, and a ratchet gear rotated integrally with the governor sheave; and

a braking portion mounted in the car and having a braking member capable of coming into and out of contact with a guide rail for guiding the car, the braking portion braking the car by pressing the braking member against the guide rail when the governor rope is restrained and the car is displaced with respect to the governor rope.

Claim 2 (Previously Presented): An emergency stop system for an elevator according to Claim 1, wherein:

a hoistway in which the car is raised and lowered is provided with a zone in which the car is accelerated or decelerated during normal operation and which adjoins the service floor for the car; and

the overspeed setting level in the zone is set to become progressively smaller toward the service floor.

Claim 3 (Previously Presented): An emergency stop system for an elevator according to Claim 2, wherein a reference position detecting portion is provided in the zone, for detecting a position that serves as a reference for detecting the position of the car by the detection portion.

Claim 4 (Currently Amended): An emergency stop system for an elevator according to Claim 1, wherein the detection portion is provided to a the governor sheave around which the governor rope is wound.

Claim 5 (Withdrawn): An emergency stop system for an elevator according to Claim 1, wherein the electromagnetic actuator has: a movable portion displaceable between an activation position where the restraining portion restrains the governor rope and a release position for releasing the restraining of the governor rope; an activation coil for displacing the movable portion into the activation position upon energization of the activation coil; a release coil for displacing the movable portion into the release position upon energization of the release coil; and a permanent magnet for selectively retaining the movable portion in the activation position and the release position.

Claim 6 (Withdrawn): An emergency stop system for an elevator according to Claim 1, wherein the electromagnetic actuator has: a movable portion displaceable between an activation position where the restraining portion restrains the governor rope and a release position for releasing the restraining of the governor rope; an urging portion that urges the movable portion into the activation portion; and an electromagnet for displacing the movable portion into the release position against an urging of the urging portion.

Claim 7 (Currently Amended): An emergency stop system for an elevator according to Claim 4, wherein:

the restraining portion is a pressing member capable of displacement into and out of contact with the governor sheave; and

the pressing member is pressed against the governor sheave through the governor rope upon activation of the electromagnetic actuator.

Claim 8 (Currently Amended): An emergency stop system for an elevator according to Claim 7, wherein:

the rope catching device further has ~~a ratchet gear rotated integrally with the governor sheave, and~~ a latch operating in an interlocking relation with the pressing member and capable of coming into engagement with the ratchet gear upon activation of the electromagnetic actuator; and

when the latch is engaged with the ratchet gear by the electromagnetic actuator, the pressing member is displaced due to a rotation force of the ratchet gear to be pressed against the governor sheave through the governor rope.

Claim 9 (Withdrawn): An emergency stop system for an elevator according to Claim 1, wherein:

the restraining portion has a receiving portion formed of a high friction material, and a pressing member displaceable into and out of contact with the receiving portion; and
the pressing member is pressed against the receiving portion through the governor rope upon activation of the electromagnetic actuator.

Claim 10 (Withdrawn): An emergency stop system for an elevator according to Claim 9, wherein:

an elastic expansion member is connected to the pressing member; and
as the pressing member is pulled by the governor rope while in contact with the governor rope, the pressing member is displaced so that its pressing force against the receiving portion is increased by the elastic expansion member.

Claim 11 (Previously Presented): An emergency stop system for an elevator according to Claim 1, wherein:

a hoistway in which the car is raised and lowered includes a first speed changing zone, a constant speed zone, and a second speed changing zone,
the overspeed setting level becomes progressively smaller toward the service floor when the car is in the first speed changing zone or the second speed changing zone, and the overspeed setting level is constant when the car is in the constant speed zone.

Claim 12 (Currently Amended): An emergency stop system for an elevator according to Claim 1, wherein the storage portion stores a normal speed pattern, and the overspeed setting level stored in the storage portion includes a first overspeed pattern and a second

overspeed pattern, and each of the normal speed pattern, first overspeed pattern, and second overspeed ~~patter~~ pattern progressively vary based on the distance between the position of the car and the service floor.

Claim 13 (Previously Presented): An emergency stop system for an elevator according to Claim 12, wherein:

a hoistway in which the car is raised and lowered includes a first speed changing zone, a constant speed zone, and a second speed changing zone,

each of the normal speed pattern, the first overspeed pattern, and the second overspeed pattern becomes progressively smaller toward the service floor when the car is in the first speed changing zone or the second speed changing zone, and

each of the normal speed pattern, the first overspeed pattern, and the second overspeed pattern is constant when the car is in the constant speed zone.

Claim 14 (Previously Presented): An emergency stop system for an elevator according to Claim 12, wherein the control portion is configured to set a normal speed of the car based on the normal speed pattern, activate a normal brake when the speed of the car becomes higher than the first overspeed level, and output the activation signal when the speed of the car becomes higher than the second overspeed level.

Claim 15 (Previously Presented): An emergency stop system for an elevator according to Claim 12, wherein the second overspeed pattern is greater than the first overspeed pattern and the first overspeed pattern is greater than the normal speed pattern at each position of the car.

Claim 16 (Previously Presented): An emergency stop system for an elevator according to Claim 12, wherein a difference between the first overspeed pattern and the normal speed pattern, and a difference between the second overspeed pattern and the first overspeed pattern are each set to be substantially constant at each position of the car.

Claim 17 (Previously Presented): An emergency stop system for an elevator according to Claim 1, wherein the control portion is configured to compute the overspeed setting level each time the elevator travels.

Claim 18 (New): An emergency stop system for an elevator, comprising:
a detection portion configured to detect a speed and a position of a car;
a control portion having a storage portion that stores, in correspondence with the position of the car, an overspeed setting level set to be a value larger than the speed of the car during normal operation, the control portion outputting an activation signal when the speed of the car becomes higher than the overspeed setting level at the position of the car obtained based on information from the detection portion, and the overspeed setting level progressively varies based on a distance between the position of the car and a service floor;
a governor rope that moves in synchronism with raising and lowering of the car;
a rope catching device having an electromagnetic actuator that is activated upon input of the activation signal, and a restraining portion that restrains the governor rope upon activation of the electromagnetic actuator; and
a braking portion mounted in the car and having a braking member capable of coming into and out of contact with a guide rail for guiding the car, the braking portion braking the car by pressing the braking member against the guide rail when the governor rope is restrained and the car is displaced with respect to the governor rope,

wherein the storage portion stores a normal speed pattern, and the overspeed setting level stored in the storage portion includes a first overspeed pattern and a second overspeed pattern, each of the normal speed pattern, first overspeed pattern, and second overspeed pattern progressively vary based on the distance between the position of the car and the service floor,

a difference between the first overspeed pattern and the normal speed pattern at a first position of the car is set to be equal to a difference between the first overspeed pattern and the normal speed pattern at every other position of the car, and

a difference between the second overspeed pattern and the first overspeed pattern at the first position of the car is set to be equal to a difference between the second overspeed pattern and the first overspeed pattern at every other position of the car.

Claim 19 (New): An emergency stop system for an elevator, comprising:

a detection portion configured to detect a speed and a position of a car;

a control portion configured to compute, each time the car travels, a relationship between the position of the car and the speed of the car as an overspeed setting level set to be a value larger than the speed of the car during normal operation, the control portion outputting an activation signal when the speed of the car becomes higher than the overspeed setting level at the position of the car obtained based on information from the detection portion, and the overspeed setting level progressively varies based on a distance between the position of the car and a service floor;

a governor rope that moves in synchronism with raising and lowering of the car;

a rope catching device having an electromagnetic actuator that is activated upon input of the activation signal, and a restraining portion that restrains the governor rope upon activation of the electromagnetic actuator; and

a braking portion mounted in the car and having a braking member capable of coming into and out of contact with a guide rail for guiding the car, the braking portion braking the car by pressing the braking member against the guide rail when the governor rope is restrained and the car is displaced with respect to the governor rope.